Monthly Oversight Report 69
44728 AES *[46526 RAC]*
ACS NPL Site
Griffith, Indiana
September 2, 2006 – September 29,2006

BLACK & VEATCH

101 N. Wacker Drive
Suite 1100
Chicago, Illinois 60606-7302

Tel: (312) 346-3775
Fax: (312) 346-4781

Black & Veatch Special Projects Corp.

USEPA/AES
American Chemical Service, Inc. RAO (0057-ROBE-05J7)

BVSPC Project 44728
BVSPC File C.3
October 18, 2006

Mr. Kevin Adler
U.S. Environmental Protection Agency
77 W. Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3590

Subject: Monthly Oversight Summary Report
No. 69 for September 2006

Dear Mr. Adler:

Enclosed is the Monthly Oversight Summary Report No. 69 for September 2006 for the American Chemical Service, Inc. Superfund Site in Griffith, Indiana.

If you have any questions, please call (312-683-7856) or email (campbelllm@bv.com).

Sincerely,

BLACK & VEATCH Special Projects Corp.

Larry M. Campbell, P.E.
Site Manager

Enclosure

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Monthly Oversight Summary Report No. 69
ACS Superfund Site
TO 057, 44728.238 (AES) ***[WA57, 46526.238 (RAC)]***

Reporting Period: Month of September (September 2 through September 29, 2006)
BVSPC O/S Dates: September 11, 19, and 22, 2006 (Mr. Campbell)

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	5	Respondent's General Contractor
Indiana Department of Environmental Management	1	State Regulatory Agency
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Austgen & Austgen Electric	2	General Contractor
Ryan Construction	1	General Mechanical Contractor

Construction Activities

Major Activities:

- Montgomery Watson Harza continued operating the groundwater treatment plant, the in-situ soil vapor extraction systems, and the air sparge systems.
- Montgomery Watson Harza replaced the Still Bottoms Pond Area In-situ Vapor Extraction system blower motor and faulty gate valves in the blower shed.
- Montgomery Watson Harza replaced a malfunctioning pH probe and other items in thermal oxidizer 2.
- Austgen Electric excavated additional trench through the wetlands and installed lower aquifer conveyance piping and electrical power and control conduits.
- Ryan Construction used a track-mounted skid loader to backfill some of the trench through the wetlands before becoming stuck in the mud.
- Montgomery Watson Harza conducted the semiannual groundwater sampling of upper and lower aquifer monitoring wells and residential wells.
- Montgomery Watson Harza conducted an operation and maintenance meeting at its Chicago office on September 8.

Activities Performed:

- Observed MWH continue to operate the groundwater treatment plant (GWTP) at a flow-demand rate of 22 to 40 gpm, treating 1,126,850 gallons during 826 of the 840 hours (98%) in the September period (August 26 – September 29). MWH reported that groundwater was pumped to the plant from all trench and well sources except MW10C.
- MWH reported that the GWTP was not operational during those periods when the thermal oxidizer units were not operational because of the inability to treat the gasses generated in the GWTP.

- MWH reported that it measured water levels in all ISVE monitoring locations on September 27 as part of the monthly monitoring plan.
- Observed MWH continue to operate the Onsite Containment Area (ONCA) SBPA and Off-Site Containment Area (OFCA) in-situ soil vapor extraction (ISVE) systems, processing vapors through thermal oxidizer units 1 and 2 (thermox 1 and 2).
- MWH reported that thermox 1 operated for 442 hours of the 840 hours (53%) in the September period, processing 1,000 cfm of vapors from the ONCA SBPA ISVE system, collecting vapors from 30 (of the total 46) ISVE wells that have been used during previous reporting periods.
- MWH reported that the SBPA blower motor stopped working during the weekend of September 9 and 10. MWH ordered a new motor and installed it on September 18. Operation of the SBPA ISVE system was resumed on September 18.
- MWH reported that most of the non-operational time of thermox 1 was associated with vacuuming the ISVE wells and replacing the blower motor in the SBPA ISVE system blower shed.
- MWH reported that thermox 2 operated for 514 of the 840 hours (61%) in the September period, processing 2,000 cfm of vapors collected from all 42 OFCA ISVE wells and aeration tank T-102.
- MWH reported that the recurring problem with a malfunctioning pH probe in thermox 2 necessitated it shutting down the unit while troubleshooting the problem. MWH and Austgen believe the problem is a low voltage current running through the unit because of a grounding issue. MWH has replaced the pH probe and other elements of the system, and believe they have solved the problem. The system has operated satisfactorily during the last week of the reporting period.
- MWH reported that most of the non-operational time of thermox 2 was associated with vacuuming the ISVE wells and evaluating and solving the pH issue.
- MWH reported that it conducted the monthly compliance sampling of thermox 1 and 2 on September 27.
- MWH reported that it had not attempted to pump free product from ISVE wells in September.
- MWH had previously reported that the pumps would be reinstalled in dual-phase extraction ISVE wells SVE-61 and SVE-79 following well cleaning. However, MWH observed that the viscous product in these wells remained (or returned) after cleaning, and concluded that the pneumatic pumps would not be appropriate for this application. MWH is evaluating the ability to use the temporary pumping setup at these locations.
- MWH reported that air was injected through the five Group 2 (SVE-49, -51, -65, -71, and -82) ISVE wells in late August through late September. From September 27 onward, air was injected into the SBPA through the Group 3 (SVE-44, -59, -77, -80, and -84) ISVE wells, each flowing at about 20 cfm.
- MWH had previously reported that some gate valves in the SBPA blower shed were not operating properly. MWH reported that these faulty gate valves were replaced in September.
- Austgen Electric used a backhoe on September 11 to excavate a 3-foot-deep trench from the end of the trench excavated on August 7 from the GWTP towards the lower aquifer

extraction wells near the northern property line. Austgen excavated to within about 100 feet of the lower aquifer wells but could not continue because of soft soil conditions.

- MWH reported that it used a sump pump and trash pump to dewater the excavated trench on September 26 and successfully installed 2-inch-diameter double-walled HDPE conveyance piping and two 1-inch-diameter PVC electrical conduits to the end of the excavated trench.
- MWH reported that Ryan Construction used a track-mounted skid loader on September 26 to backfill the trench with excavated materials. Only about 50 lineal feet of the trench could be backfilled because of the soft, slippery surface conditions that impaired the operation of the skid loader.
- MWH reported that it will evaluate additional options to complete installation of the lower aquifer conveyance piping, including deferring the installation until site conditions (e.g., dry or frozen) will support construction equipment.
- MWH conducted the semiannual groundwater sampling of upper and lower aquifer monitoring wells and residential wells. MWH reported that water levels were measured at all specified locations on September 15.
- Two two-person teams of MWH personnel mobilized to the site on September 18 and began groundwater sampling. MWH reported that 16 upper aquifer, 17 lower aquifer, and 5 residential wells were sampled, without incident during the period September 18-22. The new lower aquifer monitoring wells MW58 and MW59 were sampled for the first time. MWH could not sample lower aquifer well MW10C because the dedicated pump was not energized.
- Groundwater samples were scheduled for analysis of a full scan of the chemical parameters specified in the Revised Long-Term Groundwater Monitoring Plan for the ACS site, issued in September 2002.
- Prabhakar Kasarabada of IDEM assisted with the residential well sampling on September 19 and 20.
- The confirmation class from Augustana Lutheran Church visited the site on September 26 for a tour of the clean-up operations being conducted by MWH.
- Completed monthly oversight report (with field notes and photographs) for the August reporting period. Submitted Monthly Oversight Summary Report No. 68 to EPA on September 15. Submitted, on September 21, copies of the BVSPC field notes that were inadvertently not included in Monthly Report No. 68.
- Site Manager provided periodic reports of field activities to the EPA TOPO via telephone and E-mail.

Topics of Concern: None

Concern Resolution: None

Upcoming Activities:

- MWH to continue operating the GWTP and the OFCA and ONCA SBPA ISVE and air sparge systems.
- MWH to continue operating Group 3 air injection wells in the SBPA.
- MWH to monitor odors in the ACS break room.

- MWH to continue pumping product from selected ONCA SBPA DPE wells.
- MWH to conduct Lower Aquifer Phase 3 Investigation, including installation of pumps in existing lower aquifer wells in the area of MW53 and burial of conveyance piping and electrical and control conduit from the area of MW53 to the GWTP.
- MWH will continue construction coordination meetings at the site when field activities warrant such meetings.
- MWH will continue monthly O&M meetings to report on operation of active treatment systems.

Signature: Larry Campbell Date: October 13, 2006

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SITE STATUS MEETING AGENDA
SEPTEMBER 8, 2006
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA

MEETING DATE: Friday, September 8, 2006

MEETING TIME: 10:00 p.m.

MEETING LOCATION: MWH Chicago, 175 W. Jackson Blvd., Suite 1900

TOPICS:

SITE STATUS
- Health and Safety Summary
- GWTP Status
- ISVE Systems Status (incl. Thermal Oxidizers)
- Interaction with ACS Facility or Community

CURRENT ISSUES
- Lower Aquifer Pumping System Construction

MISCELLANEOUS
- Open

LOOK AHEAD
Field Events
- ISVE System Monitoring – September 14, 2006 (tentative)
- Lower Aquifer Pumping System Construction
- 3rd Quarter Groundwater Sampling Event – September 15-22, 2006

Reports
- Chemical Oxidation Full-Scale Application Report – September 2006
- Quarterly Monitoring Report, Active Treatment Systems, 2nd Quarter – September 2006

Health & Safety Look Ahead

Future Meetings

CAD/DPP
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SITE STATUS MEETING MINUTES
FOR SEPTEMBER 9, 2006 MEETING
AMERICAN CHEMICAL SERVICE, NPL SITE
GRIFFITH, INDIANA

MEETING DATE: Friday, September 9, 2006

MEETING TIME: 10:00 a.m.

MEETING LOCATION: MWH Chicago Office

ATTENDEES:
Larry Campbell – Black & Veatch
Kevin Adler – U.S. EPA
Peter Vagt – MWH
Chris Daly – MWH
Todd Lewis - MWH
Lee Orosz – MWH (via phone)

TOPICS:

SITE STATUS

General Site Health and Safety

During the week of August 28, H2O, a local jetting and vacuum company, was contracted to clean a number of the ISVE wells. The wells, in general, were cleaned using high-pressure water. The wastewater was vacuumed from the well into H2O's truck-mounted tank. When the tank was full, H2O returned to the GWTP to dispense the tank's contents into the GWTP system via the sump located on the decontamination pad. During previous dispensing activities, the water/product mixture in the tank was removed slowly into the sump to allow capture by the sump pump. The solids remaining in the tank were then dumped onto the containment pad, collected, and then placed in the GWTP hazardous waste roll-off box. During dispensing activities on August 31st, the pump on the H2O rig malfunctioned. The H2O operator assumed there was no water/product in the tank because the tank's level gauge indicated "empty". However, the tank was not empty of fluids, so upon opening the tank, approximately 500 gallons released out of the rig.

The majority of the material was captured within the containment structure. But since the containment structure is linked to the sump for the entire treatment plant, the liquid backed-up through the system, coming out across the floor inside the treatment plant. As a result, a layer of product was deposited across much of the inside floor. Extensive cleanup was performed using appropriate equipment and PPE.

Approximately 10 gallons of water/product spilled over the containment wall onto the adjacent gravel outside the building. H2O moved quickly to capture this fluid with the vacuum. The stained gravel was removed and placed in the hazardous roll-off box.

The cleanup and disposal was completed within one day. The only task that remains to be completed as of the date of this meeting is replacement of the excavated gravel.

Although this incident is not specifically a health and safety incident, it presented conditions that could have lead to an injury or exposure to site workers. The incident does demonstrate the vigilance that is required when dealing with the diverse activities that occur at the Site. MWH responded quickly and appropriately to remedy the situation.

Biological hazards such as bees, wasps, mosquitoes, and poison ivy continue to be present.

Groundwater Treatment Plant (GWTP) Status

The GWTP operated 94 percent of the time from July 27th to August 25th (653 out of 696 hours). No major issues occurred with the GWTP since the last meeting on August 11th. Pumping is occurring from all sources except MW-10C. The pump in MW-10C will be brought back on line upon completion of the Lower Aquifer Pumping System.

Off-Site Area/SBPA ISVE Systems

The Off-Site Area In-situ Soil Vapor Extraction (ISVE) System was operational for 63 percent of the time from July 27th to August 25th (441 out of 696 hours). All 42 ISVE wells and 3 air sparge wells are active.

The Still Bottoms Pond Area (SBPA) ISVE system was operational for 17 percent of the time from July 27th to August 25th (5 out of 30 days). Air Injection Well Group 1 and associated ISVE wells were active until August 18th. Air Injection Well Group 2 and associated ISVE wells were active after August 18th.

Downtimes for both ISVE systems were related to maintenance activities associated with the thermal oxidizers. Also, lower than expected concentrations or flow from the SBPA ISVE system forced the shutdown of Thermal Oxidizer 1 (ThermOx 1) and the ISVE system. MWH believes that the lower concentrations or flow may have been caused by limited screen availability in some of the extraction wells. Upon completion of the well cleaning, the flow was improved and the system was restarted.

ThermOx 1 was shut down during the month for flange stack repairs. Thermal Oxidizer 2 (ThermOx 2) was shut down during the month due to continued problems with the pH control system.

Interaction with ACS Facility and Community

A Health and Safety meeting to include both ACS and MWH personnel is planned for late October.

A site visit by Augustana Lutheran Church's confirmation class is planned for September 26th.

Current Issues

From August 21st to 23rd, MWH completed the installation of sentinel wells associated with Phase 3 of the Lower Aquifer Investigation. Drilling and well installation was performed by Boart Longyear of Indianapolis, Indiana.

Trenching activities associated with Phase 3 of the Lower Aquifer Investigation began on August 8th. Seventy percent of the trenching was completed before saturated soil conditions prevented further progress. Heavy rains have contributed to the conditions throughout the month. MWH has repeatedly attempted to continue construction activities and will continue to do so.

LOOK AHEAD

Field Events

- ISVE System Monitoring – September 14
- Lower Aquifer Pumping System Construction - Ongoing
- 3rd Quarter Groundwater and Residential Well Sampling Event – September 15-22

Reports

- Chemical Oxidation Fourth Full-Scale Application Report – September 29
- Quarterly Monitoring Report, Active Treatment Systems, 2nd Quarter – September 22

Health & Safety Look Ahead

- Proper PPE should be worn during monthly ISVE system monitoring.
- Precautions should be taken during trenching activities associated with the Phase 3 Lower Aquifer Investigation. The proposed trench will cross power lines, water lines, and the Perimeter Groundwater Containment System.
- Kevin Adler mentioned that alternating personnel who conduct tailgate safety meetings is an excellent method to combat complacency in our routine activities. Other MWH personnel, besides Lee Orosz, will periodically lead the daily tailgate safety meetings.
- The need for eyewash stations in the blower sheds will be evaluated.

Future Meetings

Monthly Site Status Meeting – Thursday, October 5, 2006, 10 a.m. at the MWH Chicago office.

CAD/PJV
J:\405\0577 ACS\0101 PM\Meetings\Meeting Minutes 2006\ACS Meeting Minutes 9-9-06.doc

Table 1
Summary of Off-Site ISVE Well Cleaning
August 28-30, 2006
American Chemical Service, Inc. NPL Site

Well	Activity
SVE-1	Vacuumed
SVE-2	Pressure washed and vacuumed
SVE-3	Vacuumed
SVE-4	Vacuumed
SVE-5	Vacuumed
SVE-6	Vacuumed
SVE-7	Vacuumed
SVE-8	Vacuumed
SVE-10	Pressure washed and vacuumed
SVE-12	Vacuumed
SVE-13	Pressure washed and vacuumed
SVE-17	Vacuumed
SVE-18	Pressure washed and vacuumed
SVE-19	Vacuumed
SVE-23	Vacuumed
SVE-30	Pressure washed and vacuumed
SVE-31	Vacuumed
SVE-35	Vacuumed
SVE-36	Pressure washed and vacuumed
SVE-37	Pressure washed and vacuumed

Table 2
Summary of SBPA ISVE Well Cleaning
August 28-30, 2006
American Chemical Service, Inc. NPL Site

Well	Activity
SVE-43	Pressure washed and vacuumed
SVE-45	Pressure washed and vacuumed
SVE-46	Vacuumed
SVE-47	Pressure washed and vacuumed
SVE-48	Pressure washed and vacuumed
SVE-49	Vacuumed
SVE-52	Pressure washed and vacuumed
SVE-53	Pressure washed and vacuumed
SVE-55	Pressure washed and vacuumed
SVE-57	Pressure washed and vacuumed
SVE-59	Pressure washed and vacuumed
SVE-60	Pressure washed and vacuumed
SVE-62	Pressure washed and vacuumed
SVE-66	Pressure washed and vacuumed
SVE-69	Vacuumed
SVE-72	Pressure washed and vacuumed
SVE-74	Pressure washed and vacuumed
SVE-88	Pressure washed and vacuumed

Remedial Progress Report	September-06	Report Date: 10/3/2006

GWTP & Dewatering

The GWTP was operational for 826 out of 840 hours (98%) from August 25 to September 29.
Total Gallons treated = 1,126,850 gallons since 8/25/06 (35 days)

Tables, Graphs & Figures
Table - Effluent Summary
Graphs - Off-Site Dewatering
Graphs - SBPA Dewatering

SBPA ISVE System

System operational 442 out of 840 hours (53 %) from August 25 to September 29.
System monitoring was conducted on 9/27/06.
The next monitoring event is scheduled for 10/24/06.

Tables, Graphs & Figures
Table - Sampling Data
Graph - Mass Extraction
Graph - Total VOC Removal

Product Removal

	06/30/06	07/18/06	07/21/06	08/16/06
SVE-52	-	-	-	-
SVE-53	35 gal	-	14 gal	-
SVE-62	-	-	-	-
SVE-72	-	18 gal	-	12 gal
SVE-88	-	-	-	-
DPE 61	-	-	-	-

Notes:
No product removal was performed during September.

Current Status (as of 9/27)

Active Wells (31 of 46)	
SVE-43	SVE-68
SVE-45	SVE-69
SVE-46	SVE-70
SVE-47	SVE-71
SVE-48	SVE-74
SVE-50	SVE-75
SVE-51	SVE-76
SVE-55	SVE-78
SVE-56	SVE-79
SVE-57	SVE-81
SVE-58	SVE-82
SVE-60	SVE-83
SVE-63	SVE-85
SVE-64	SVE-86
SVE-66	SVE-87
SVE-67	
Air Injection Wells (Group 3)	
SVE-44	
SVE-59	
SVE-77	
SVE-80	
SVE-84	

Off-Site ISVE System

System operational 514 out of 840 hours (61%) from August 25 to September 29.
System monitoring was conducted on 9/27/06.
The next monitoring event is scheduled for 10/24/06.

Tables, Graphs & Figures
Table - Sampling Data
Graph - Mass Extraction
Graph - Total VOC Removal

Current Status (as of 9/27)

Active Wells (42 of 42)	
SVE-01	SVE-22
SVE-02	SVE-23
SVE-03	SVE-24
SVE-04	SVE-25
SVE-05	SVE-26
SVE-06	SVE-27
SVE-07	SVE-28
SVE-08	SVE-29
SVE-09	SVE-30
SVE-10	SVE-31
SVE-11	SVE-32
SVE-12	SVE-33
SVE-13	SVE-34
SVE-14	SVE-35
SVE-15	SVE-36
SVE-16	SVE-37
SVE-17	SVE-38
SVE-18	SVE-39
SVE-19	SVE-40
SVE-20	SVE-41
SVE-21	SVE-42

Comments

Data presented herein is for informational purposes only. Not all data presented in this report has been validated.

Table
Summary of Effluent Analytical Results
Groundwater Treatment System
American Chemical Service NPL Site
Griffith, Indiana

Event Date	Month 110 7/11/2006	Month 111 8/7/2006	Month 112 9/12/2006	Effluent Limits	Lab Reporting Limits
pH	7.08	7.11	7.14	6-9	none
TSS	1.40	NS	NS	30	10
BOD	2.0 U/	NS	NS	30	2
Arsenic	4.1 B/	NS	NS	50	3.4
Beryllium	0.20 U/	NS	NS	NE	0.2
Cadmium	0.20 U/	NS	NS	4.1	0.3
Manganese	0.64 B/	NS	NS	NE	10
Mercury	0.10 U/	NS	NS	0.02 (w/DL = 0.64)	0.64
Selenium	1.8 U/	NS	NS	8.2	4.3
Thallium	3.3 U/	NS	NS	NE	5.7
Zinc	2.7 B/	NS	NS	411	1.2
Benzene	0.50 U/	0.50 U/	0.50 U/	5	0.5
Acetone	2.5 U/	2.5 U/	3.1 B/	6,800	3
2-Butanone	2.5 U/	2.5 U/	2.5 U/	210	3
Chloromethane	0.50 U/	0.50 U/	0.50 U/	NE	0.5
1,4-Dichlorobenzene	0.50 U/	0.50 U/	0.50 U/	NE	0.5
1,1-Dichloroethane	0.50 U/	0.97	0.50 U/	NE	0.5
cis-1,2-Dichloroethene	0.29 J/	0.92	0.50 U/	70	0.5
Ethylbenzene	0.50 U/	0.50 U/	0.50 U/	34	0.5
Methylene chloride	0.42 J/	0.20 J/	0.50 U/	5	0.6
Tetrachloroethene	0.50 U/	0.50 U/	0.50 U/	5	0.5
Trichloroethene	0.50 U/	0.50 U/	0.50 U/	5	0.5
Vinyl chloride	0.84	0.42 J/	0.50 U/	2	0.5
4-Methyl-2-pentanone	2.5 U/	2.5 U/	2.5 U/	15	3
bis (2-Chloroethyl) ether	ND	NS	NS	9.6	9.6
bis(2-Ethylhexyl) - phthalate	ND	NS	NS	6	6
4 - Methylphenol	ND	NS	NS	34	10
Isophorone	ND	NS	NS	50	10
Pentachlorophenol	ND	NS	NS	1	1
PCB/Aroclor-1016	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1221	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.92*
PCB/Aroclor-1232	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1242	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1248	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1254	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5
PCB/Aroclor-1260	ND	NS	NS	0.00056 (w/DL = 0.1 to 0.9)	0.5

Notes:

Bolded result indicates a exceedence of the discharge limit
pH data is expressed in S.U.
Metals, VOC, SVOC and PCB data is expressed in ug/L
ND = Not detected
NS = This analyte was not sampled or analyzed for
NE = No effluent limit established.
DL = Detection limit
* = Approved SW-846 method is incapable of achieving effluent limit.

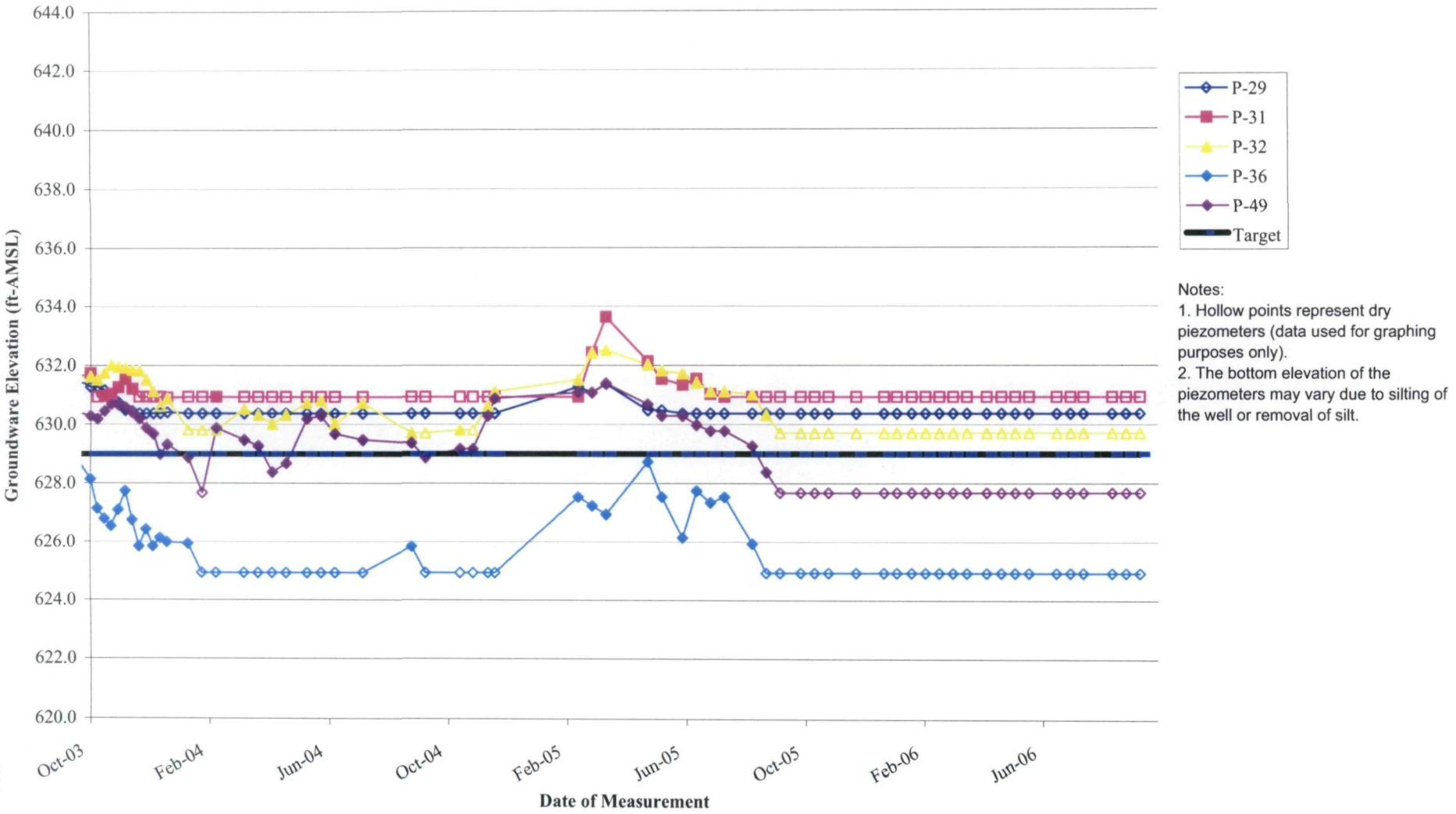
DRAFT VERSION
For Informational Purposes Only

Not all data presented here has been validated
Notes and suffix definitions have not been updated.

Suffix Definitions:

_/ = Data qualifier added by laboratory
/_ = Data qualifier added by data validator
J = Result is estimated
B = Compound is also detected in the blank
UJ = Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value
JB = Result is detected below the reporting limit and is an estimated concentration. The compound is also detected in the method blank resulting in a potential high bias
UB = Compound or analyte is not detected at or above the indicated concentration due to blank contamination
UBJ = Analyte is not detected at or above the indicated concentration due to blank contamination, however the calibration was out of range. Therefore the concentration is estimated.

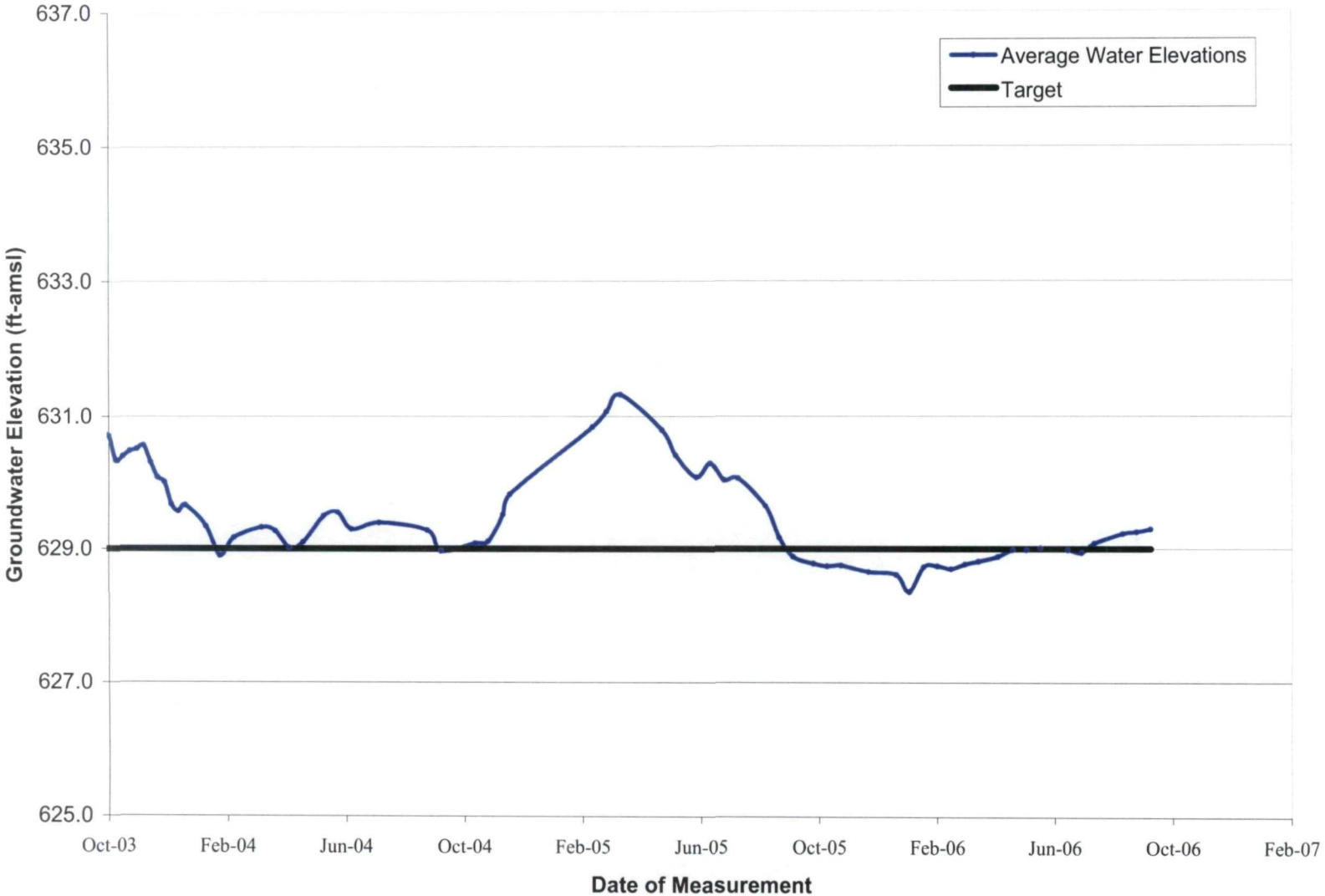
Figure 1
SBPA Water Level Status
ACS NPL Site
Griffith, Indiana



Notes:
1. Hollow points represent dry piezometers (data used for graphing purposes only).
2. The bottom elevation of the piezometers may vary due to silting of the well or removal of silt.

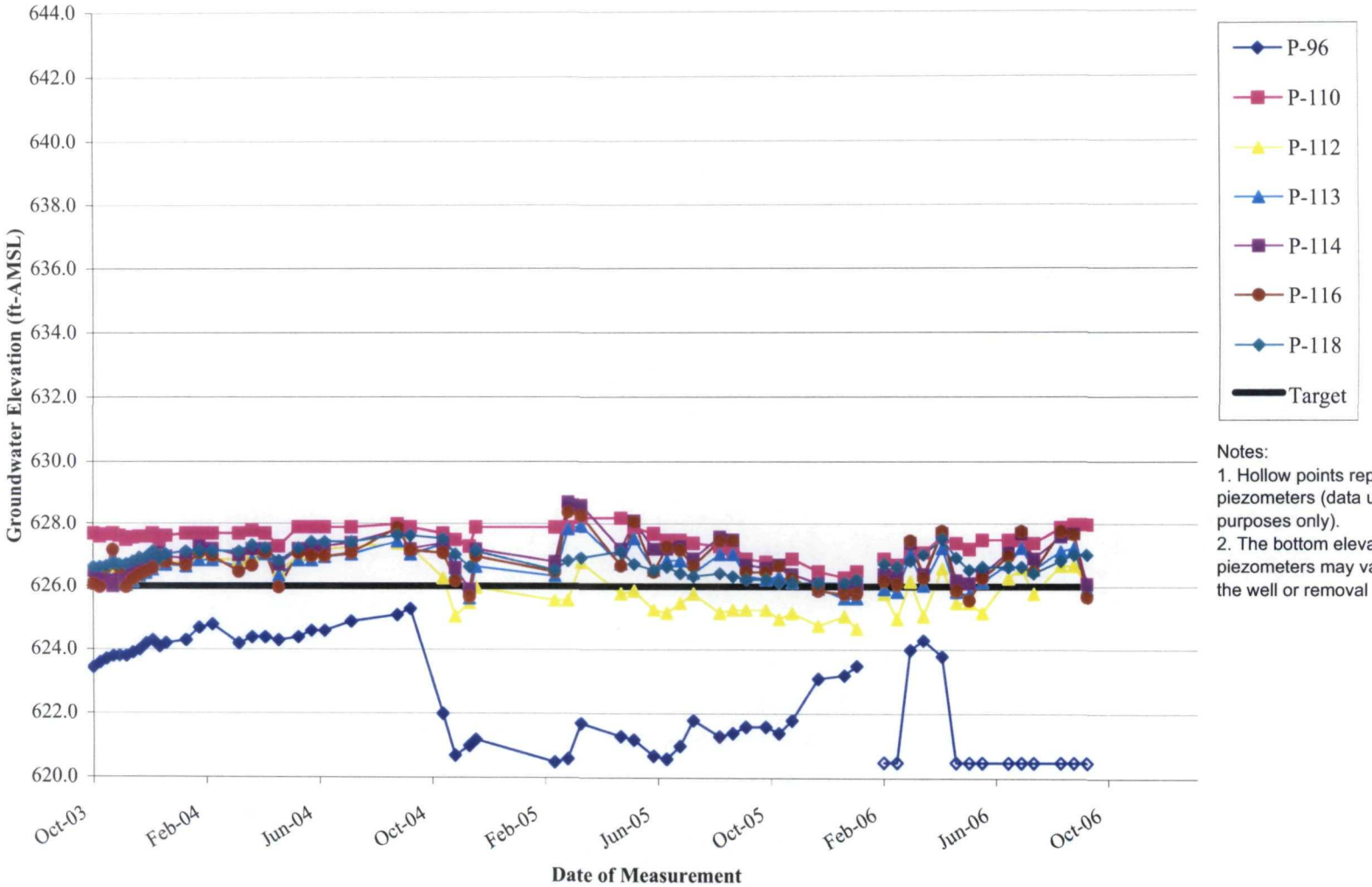
JEF/CDC/CAD
J:/209/0603ACS/0301 GWTP/BWES Data/BWES Performance.2006.xls/On-Site Chart

On-Site Average Water Elevations



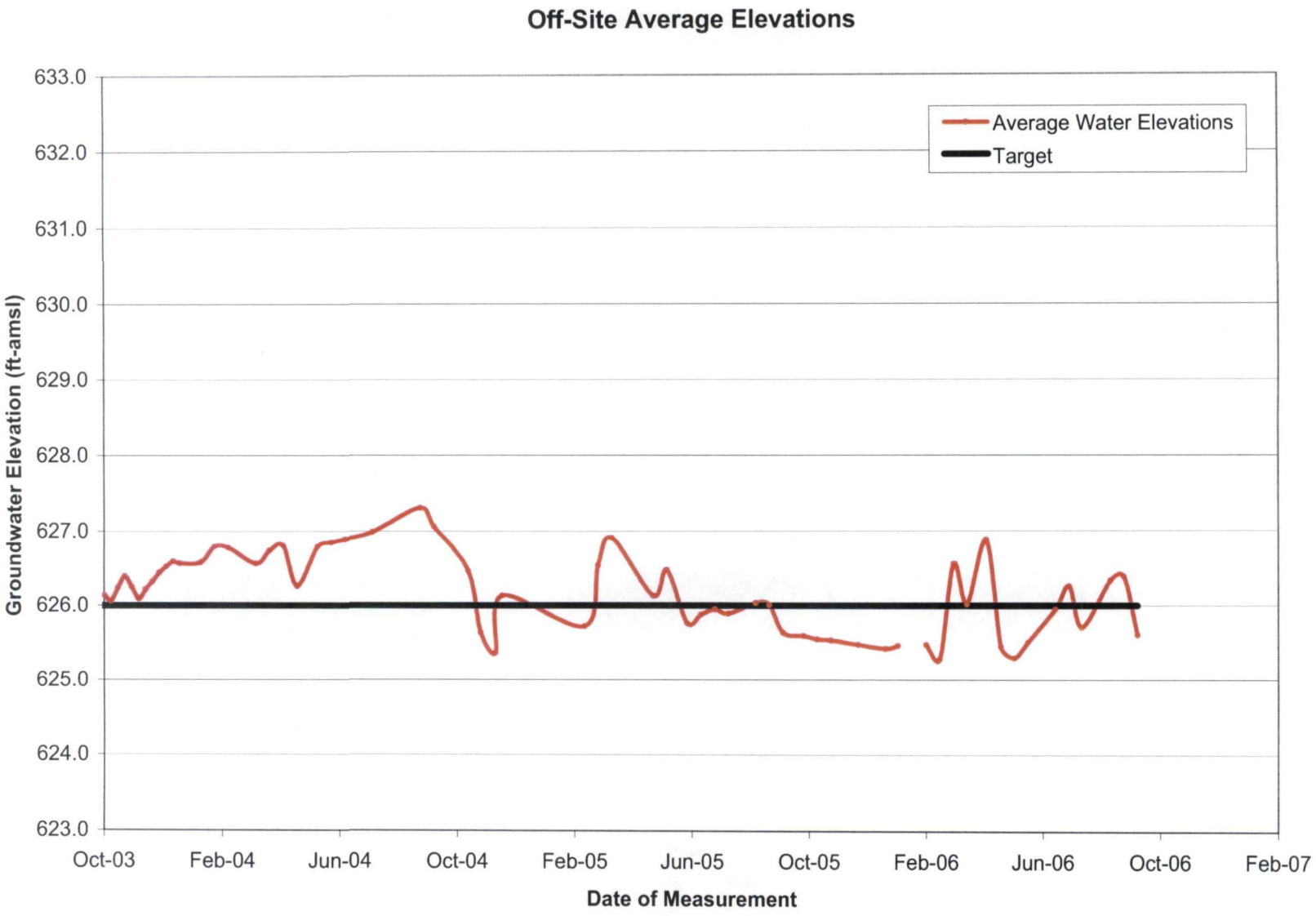
JEF/TPC/CDC/CAD
209\0603 ACS\0301 GWTP\BWES and Dewatering Data\BWES Performance.2006.xls[On-Site Average Chart]

Figure 3
Off-Site Water Level Status - Piezometers
Groundwater Monitoring
ACS NPL Site
Griffith, Indiana



Notes:
1. Hollow points represent dry piezometers (data used for graphing purposes only).
2. The bottom elevation of the piezometers may vary due to silting of the well or removal of silt.

JEF/CDC/CAD
J:/209/0603 ACS/0301 GWTP/BWES and Dewatering Data/BWES Performance.2006.xls/Off-Site Chart



JEF/TPC/CDC
209\0603 ACS\0301 GWTP\BWES and Dewatering Data\BWES Performance.2006.xls[Off-Site Average Chart]

Table 3
SBPA and Off-Site ISVE System Results
for Method TO-14 (VOCs) - August 2006
American Chemical Service
Griffith, Indiana

		Sampled 8/10/2006			
Compounds	**Units**	**SBPA ISVE**		**Off-Site ISVE**	
1,1,1-Trichloroethane	ppbv	90,000		240,000	
1,1,2,2-Tetrachloroethane	ppbv	ND	U	ND	U
1,1,2-Trichloroethane	ppbv	ND	U	ND	U
1,1-Dichloroethane	ppbv	7,300		22,000	
1,1-Dichloroethene	ppbv	790		1,300	
1,2-Dichloroethane	ppbv	1,400		5,800	
1,2-Dichloropropane	ppbv	730		1,600	
2-Butanone (Methyl Ethyl Ketone)	ppbv	7,300		48,000	
2-Hexanone	ppbv	ND	U	ND	U
4-Methyl-2-pentanone	ppbv	6,500		34,000	
Acetone	ppbv	8,500		53,000	
Benzene	ppbv	18,000		62,000	
Bromodichloromethane	ppbv	ND	U	ND	U
Bromoform	ppbv	ND	U	ND	U
Bromomethane	ppbv	ND	U	ND	U
Carbon Disulfide	ppbv	ND	U	ND	U
Carbon Tetrachloride	ppbv	ND	U	ND	U
Chlorobenzene	ppbv	ND	U	ND	U
Chloroethane	ppbv	ND	U	450.0	J/J
Chloroform	ppbv	11,000		16,000	
Chloromethane	ppbv	ND	U	ND	U
cis-1,2-Dichloroethene	ppbv	23,000		10,000	
cis-1,3-Dichloropropene	ppbv	ND	U	ND	U
Dibromochloromethane	ppbv	ND	U	ND	U
Ethyl Benzene	ppbv	26,000		81,000	
m,p-Xylene	ppbv	100,000		330,000	
Methylene Chloride	ppbv	39,000		160,000	
o-Xylene	ppbv	45,000		140,000	
Styrene	ppbv	ND	U/R	ND	U/R
Tetrachloroethene	ppbv	100,000		240,000	
Toluene	ppbv	120,000		560,000	E
trans-1,2-Dichloroethene	ppbv	ND	U	ND	U
trans-1,3-Dichloropropene	ppbv	ND	U	ND	U
Trichloroethene	ppbv	54,000		130,000	
Vinyl Chloride	ppbv	2,400		780	
Total	**ppbv**	**660,920**		**2,135,930**	
Total	**lb/hr**	**15.892**		**49.747**	

Notes:
NC - Not calculated
ND - Non-detect
ppbv - parts per billion volume
lb/hr - pounds per hour

Qualifiers:
J - Result is estimated
U - below reported quantitation limit
_/ - Laboratory data qualifier
/_ - Data validation qualifier

VOCs in lb/hr calculated based on Offsite: 1581 scfm, 80 F (7/6/06); On-site: 1551 scfm, 120 F (7/19/06)

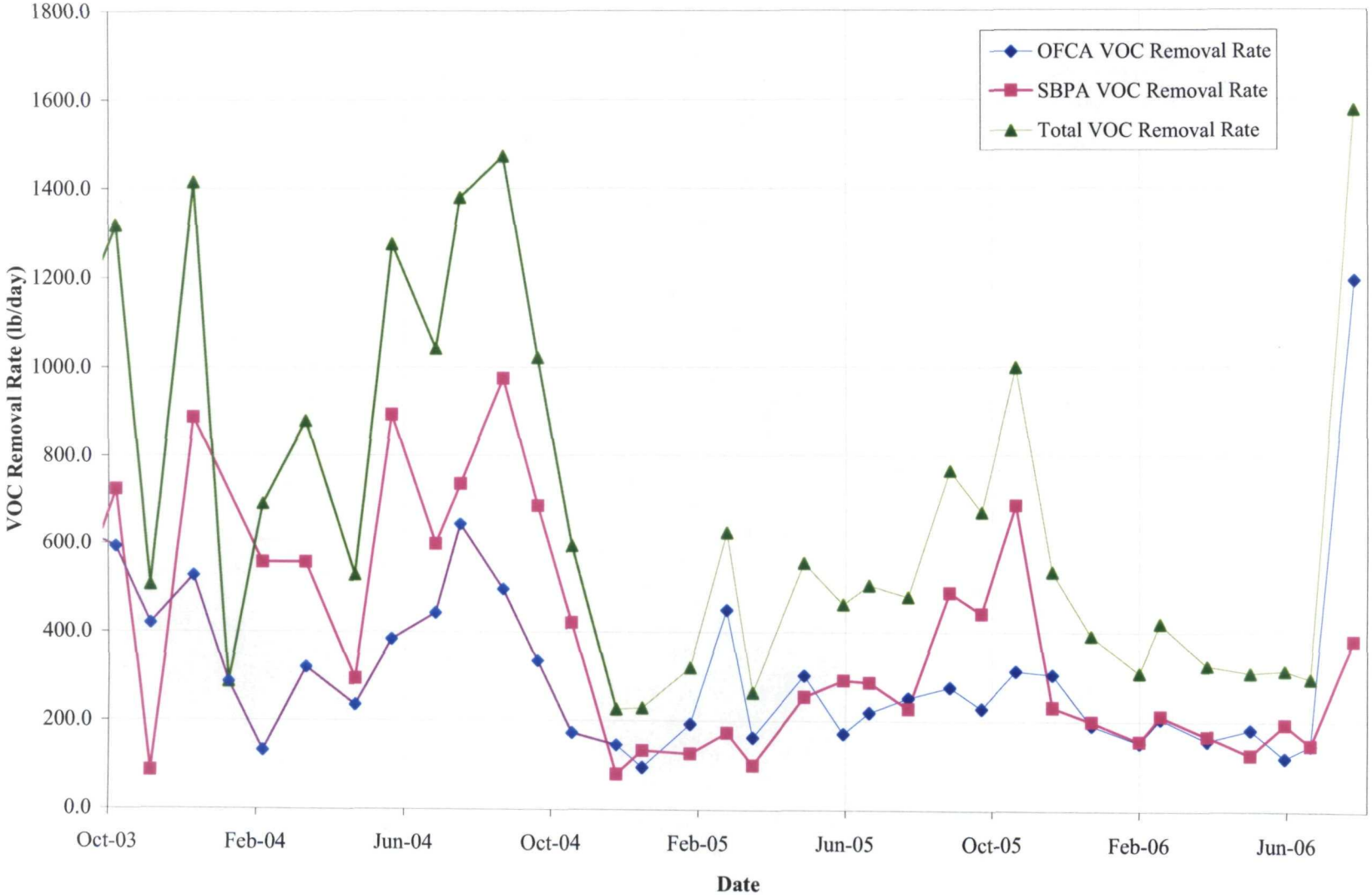
Table 6
SBPA and Off-Site ISVE System Results
for Method TO-13 (SVOCs) - August 2006
American Chemical Service
Griffith, Indiana

		Sampled 8/10/2006			
Compounds	**Units**	**SBPA ISVE**		**Off-Site ISVE**	
1,2,4-Trichlorobenzene	µg	ND	U	ND	U
1,2-Dichlorobenzene	µg	8.1		2.2	
1,3-Dichlorobenzene	µg	0.54	J J	ND	U
1,4-Dichlorobenzene	µg	1.4		ND	U
2,4,5-Trichlorophenol	µg	ND	U	ND	U
2,4,6-Trichlorophenol	µg	ND	U	ND	U
2,4-Dichlorophenol	µg	ND	U	ND	U
2,4-Dimethylphenol	µg	ND	U	ND	U
2,4-Dinitrophenol	µg	ND	U	ND	U
2,4-Dinitrotoluene	µg	ND	U	ND	U
2,6-Dinitrotoluene	µg	ND	U	ND	U
2-Chloronaphthalene	µg	ND	U	ND	U
2-Chlorophenol	µg	ND	U	ND	U
2-Methylnaphthalene	µg	1.2		0.48	J J
2-Methylphenol (o-Cresol)	µg	ND	U	ND	U
2-Nitroaniline	µg	ND	U	ND	U
2-Nitrophenol	µg	ND	U	ND	U
3,3'-Dichlorobenzidine	µg	ND	U	ND	U
3-Nitroaniline	µg	ND	U	ND	U
4,6-Dinitro-2-methylphenol	µg	ND	U	ND	U
4-Bromophenyl-phenyl Ether	µg	ND	U	ND	U
4-Chloro-3-methylphenol	µg	ND	U	ND	U
4-Chloroaniline	µg	ND	U	ND	U
4-Chlorophenyl-phenyl Ether	µg	ND	U	ND	U
4-Methylphenol/3-Methylphenol	µg	ND	U	ND	U
4-Nitroaniline	µg	ND	U	ND	U
4-Nitrophenol	µg	ND	U	ND	U
Acenaphthene	µg	ND	U	ND	U
Acenaphthylene	µg	ND	U	ND	U
Anthracene	µg	ND	U	ND	U
Benzo(a)anthracene	µg	ND	U	ND	U
Benzo(a)pyrene	µg	ND	U	ND	U
Benzo(b)fluoranthene	µg	ND	U	ND	U
Benzo(g,h,i)perylene	µg	ND	U	ND	U
Benzo(k)fluoranthene	µg	ND	U	ND	U
bis(2-Chloroethoxy) Methane	µg	ND	U	ND	U
bis(2-Chloroethyl) Ether	µg	1.2		ND	U
bis(2-Ethylhexyl)phthalate	µg	17		24	
Butylbenzylphthalate	µg	ND	U	ND	U
Chrysene	µg	ND	U	ND	U
Dibenz(a,h)anthracene	µg	ND	U	ND	U
Dibenzofuran	µg	ND	U	ND	U
Diethylphthalate	µg	ND	U	ND	U
Dimethylphthalate	µg	ND	U	ND	U
di-n-Butylphthalate	µg	ND	U	ND	U
Di-n-Octylphthalate	µg	ND	U	ND	U
Fluoranthene	µg	ND	U	ND	U
Fluorene	µg	ND	U	ND	U
Hexachlorobenzene	µg	ND	U	ND	U
Hexachlorobutadiene	µg	1.1		ND	U
Hexachlorocyclopentadiene	µg	ND	U	ND	U
Hexachloroethane	µg	ND	U	ND	U
Indeno(1,2,3-c,d)pyrene	µg	ND	U	ND	U
Isophorone	µg	3.9		1.3	
Naphthalene	µg	5.2		2.1	
Nitrobenzene	µg	ND	U	ND	U
N-Nitroso-di-n-propylamine	µg	ND	U	ND	U
N-Nitrosodiphenylamine	µg	ND	U	ND	U
Pentachlorophenol	µg	ND	U	ND	U
Phenanthrene	µg	ND	U	ND	U
Phenol	µg	ND	U	ND	U
Pyrene	µg	ND	U	ND	U
Total	µg	**39.64**		**30.08**	

Notes:
µg - Microgram
NC - Not calculated
ND - Non-detect

Qualifiers:
J - Result is estimated
U - below reported quantitation limit
' - Laboratory data qualifier
' - Data validation qualifier

VOC Removal Rate
American Chemical Services NPL Site, Griffith, IN



CDC/CAD
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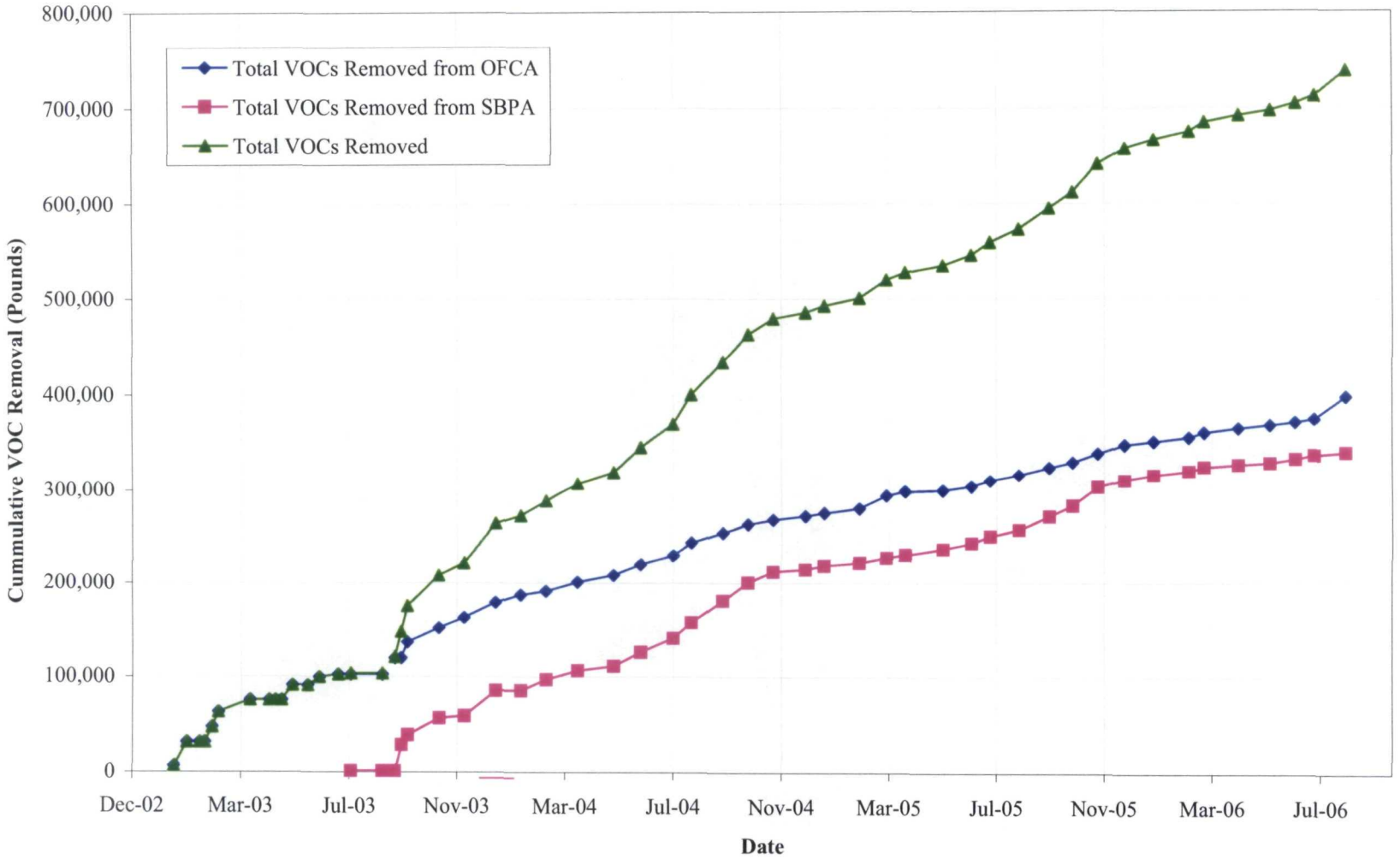
Total VOCs Removed
American Chemical Services NPL Site, Griffith, IN



CDC/CAD
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11 Sept 06 Mon

0945 Arrive Onsite - rain
Overcast Cool 61°F
Personnel Onsite
Lee Orosz MWH
Greg Kaufman Austgen
Tim Kirkland "
Larry Campbell BVSPC

1000 Disc w/ Lee. Austgen is
onsite & trying to dig LA Conveyance
piping trench using backhoe line
1040 Austgen dug trench to w/i
100' of LA wells. But couldn't
continue because of slippery conditions
Austgen tried to return to GWTP
w/ backhoe but was tearing up
roadway & close to slipping into
trench
24 frm
1047 Photo 91-23 looking W at
new trench excavated from end
of previous trench
25 frm
1050 Photo 91-24 looking SW at
excavated trench and stuck
backhoe. 26 frm
1055 Photo 91-25 looking E At

Larry Campbell

end of excavated trench.

1130 Disc w/ Lee. BNCA ISVE blower motor stopped working over weekend. Tim in process of removing motor to install replacement. Will first try to repair motor.

1220 Photo 92-01 looking W at location of non working ISVE blower motor in SBPA blower shed

1222 Photo 92-02 looking W at malfunctioning blower motor in SBPA ISVE blower shed

1230 Left site for day

LM Campbell

19 Sept 06 Tues

0840 Arrive Onsite - light clouds Sunny, Cool, 58°F

Personnel

Lee Orosz	MWH
Dave Powers	"
Justin Kruger	"
Tim Carroll	"
Leslie Powers	"
Jeff Watson	FPS
Larry Campbell	BvSPC
Prabhakar Kasarabada	IDEM
Kevin Falvey	Microbac

0850 Dave held safety briefing w/ MWH staff before starting GW Sampling

0900 Justin reported that 8 wells were sampled yesterday. This is the full set sampling round w/ all parameters sampled - the 5 yr sampling round.

1030 Photo 92-03 looking NW at Leslie & Tim purging water from MW 58 in prep for initial sampling of this well.

LM Campbell

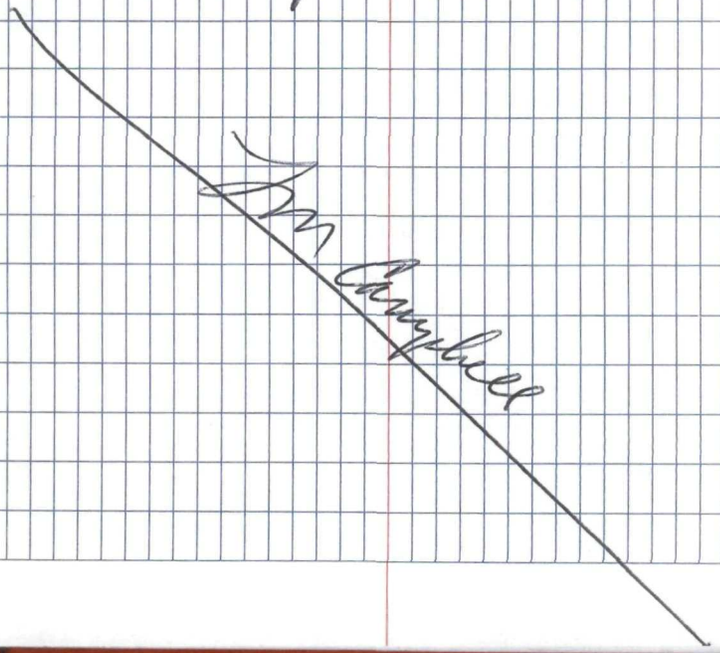
(26)

1045 Photo 92-04 looking SE of Leslie collecting GW sample from MW58.
1054 Photo 92-05 looking S as MWH crew remove sampling pump from MW58
1100 Decon'ed pump after sampling MW58 + moved to MW59
1123 Photo 92-06 looking N at MWH lowering pump & installing new tubing in MW59
1140 Photo 92-07 looking E at MWH purging MW59
1210-1230 Lunch
1341 Photo 92-08 looking SE at MWH removing Horiba cell in preparation to sample. Took more than 2 hr to purge MW59
1346 Photo 92-09 looking SE at MWH collecting VOC Sample
1401 Photo 92-10 looking S at MWH collecting last sample from MW59

JM Campbell

(27)

1405 Photo 92-11 looking E at MWH removing pump from MW59
1422 Photo 92-12 looking down into Pump Shelter @ MW56 as well being purged.
1439 Photo 92-13 looking at Justin collecting GW sample from MW56
1450 Photo 92-14 looking S at Prabhakar helping MWH collect VOC sampling @ Residential well PW-C 1029 Roder
1500 Left Site for day



22 Sept 06 Fri

0930 Arrive onsite - Overcast
calm rain earlier 63°F

Personnel On Site
Lee Cressy MWH
Tim Kirkland Austgen
Justin Finger MWH
Dave Powers MWH

1023 Photo 92-15 looking N at Justin disposing of purge water after sampling MW 51 earlier.

1048 Photo 92-16 looking E into LA Conveyance trench showing sump pump trying to dewater the trench

1145 Photo 92-17 looking W at Justin packing up sampling gear for return.

1325 Photo 92-18 looking N at new surface water level gauges that MWH is going to install today

1330 Left site for day

JM Campbell

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #2
Date: 9-11-06 Time: 1122
Photographer: Larry Campbell
Description: Photo facing west at SBPA ISVE blower shed showing non-functioning blower motor prior to being shipped out for repair or replacement.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #3
Date: 9-19-06 Time: 1030
Photographer: Larry Campbell
Description: Photo facing northwest showing Leslie and Tim of MWH purging water from MW58 in preparation for the initial sampling of this well.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #4
Date: 9-19-06 Time: 1045
Photographer: Larry Campbell
Description: Photo facing southeast showing Leslie (MWH) collecting groundwater sample from MW58.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #5
Date: 9-19-06 Time: 1054
Photographer: Larry Campbell
Description: Photo facing south showing MWH sampling crew removing the sampling pump from MW58.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #6
Date: 9-19-06 Time: 1123
Photographer: Larry Campbell
Description: Photo facing north showing MWH crew lowering pump and installing new tubing in MW59.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #7
Date: 9-19-06 Time: 1140
Photographer: Larry Campbell
Description: Photo facing east showing MWH crew purging MW59 prior to sampling.

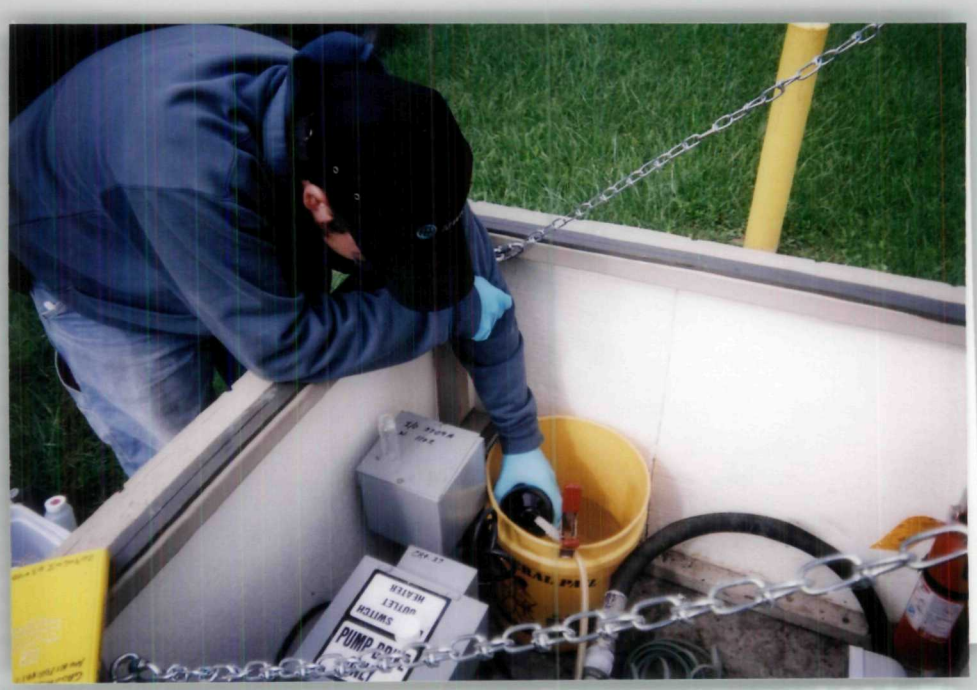
Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #8
Date: 9-19-06 Time: 1341
Photographer: Larry Campbell
Description: Photo facing southeast showing MWH crew removing Horeba cell in preparation to sample groundwater. Took more than 2 hours to purge the well.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #9
Date: 9-19-06 Time: 1346
Photographer: Larry Campbell
Description: Photo facing southeast showing MWH crew collecting VOC sample from MW59.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #10
Date: 9-19-06 Time: 1401
Photographer: Larry Campbell
Description: Photo facing south showing MWH crew collecting last groundwater sample from MW59.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #11
Date: 9-19-06 Time: 1405
Photographer: Larry Campbell
Description: Photo facing east showing MWH crew removing pump from MW59. Dedicated tubing will be reinserted into well.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #12
Date: 9-19-06 Time: 1422
Photographer: Larry Campbell
Description: Photo facing down into pump shelter at MW56 showing well being purged.



Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #13
Date: 9-19-06 Time: 1439
Photographer: Larry Campbell
Description: Photo facing down into MW56pump shelter showing Justin collecting groundwater sample.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES [46526 RAC]
Roll: 92 Photo #14
Date: 9-19-06 Time: 1450
Photographer: Larry Campbell
Description: Photo facing south showing Prabhakar Kasarabada (IDEM) (on right) assisting MWH crew in collecting VOC samples at residential well PW-C at 1029 Reder Road.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #15
Date: 9-22-06 Time: 0930
Photographer: Larry Campbell
Description: Photo facing north showing Justin disposing of purge water into tank after sampling MW51. Purge water will be processed through the groundwater treatment plant. This is last well in semiannual sampling.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #16
Date: 9-22-06 Time: 1048
Photographer: Larry Campbell
Description: Photo facing east showing lower aquifer conveyance trench with sump pump being used to dewater the trench.

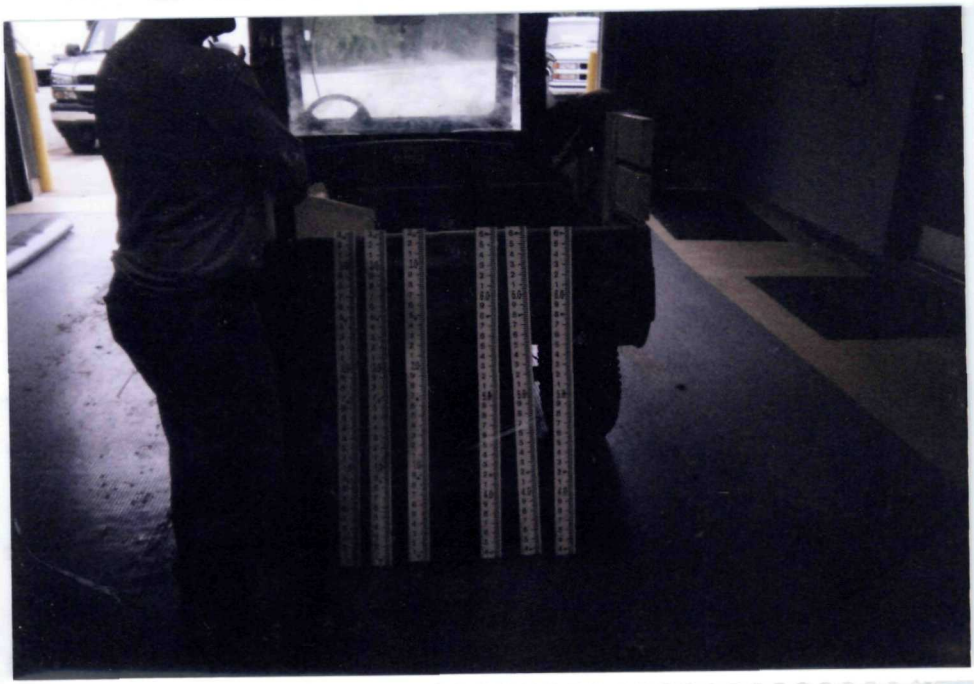
Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #17
Date: 9-22-06 Time: 1145
Photographer: Larry Campbell
Description: Photo facing west showing Justin packing sampling gear to return to supplier.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 91 Photo #24
Date: 9-11-06 Time: 1047
Photographer: Larry Campbell
Description: Photo facing west showing new conveyance piping trench excavated from end of previous trench. Note black HDPE conveyance piping and white PVC electrical conduit.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 91 Photo #25
Date: 9-11-06 Time: 1050
Photographer: Larry Campbell
Description: Photo facing southwest showing excavated trench and backhoe stuck in mud. Note water in trench.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 91 Photo #26
Date: 9-11-06 Time: 1055
Photographer: Larry Campbell
Description: Photo facing east at current end of excavated trench approximately 100' south of MW53.

Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #1
Date: 9-11-06 Time: 1120
Photographer: Larry Campbell
Description: Photo facing west inside the SBPA ISVE blower shed showing location of non-working blower motor.



Site: American Chemical Service, Inc.
Proj. #: 44728 AES *[46526 RAC]*
Roll: 92 Photo #18
Date: 9-22-06 Time: 1325
Photographer: Larry Campbell
Description: Photo facing north showing new surface water level gauges that MWH is going to install today.